

REMARKS

I. Status Of The Application

This Reply is being submitted in response to the Non-Final Office Action mailed on October 20, 2009. Claims 1-12 are pending in this application. In the Office Action, the Examiner has rejected claims 1-7, 9 and 10 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,438,234 to Gisin et al. ("Gisin"); claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Gisin and WIPO Publication WO 02/49267 to Duraffourg et al. ("Duraffourg"); claim 8 as being unpatentable under 35 U.S.C. § 103(a) over Gisin and U.S. Patent No. 7,555,127 to Nambu et al. ("Nambu"). Reconsideration of the pending claims is requested in view of the present remarks. No amendments are made in this paper.

II. Rejection of Claims Under 35 U.S.C. § 102

The Examiner has rejected claims 1-7, 9 and 10 under 35 U.S.C. § 102(b) as being anticipated by Gisin. Applicants respectfully traverse this rejection.

Gisin discloses a quantum cryptography device and method. Gisin discloses that "in order to obtain a good visibility, the two interferometers 4 and 5 have to be kept identical, and should preserve polarization." Col. 2, ll. 56-58. However, Gisin does not teach or suggest that the polarization states of two pulses are controlled during the course from the splitting to the recombining. Further, Figure 1 of Gisin does not teach or suggest that the polarization states of two pulses, respectively, passing through the light paths 42 and 43 have to be kept identical.

In order for the device shown in Fig. 1 of Gisin to meet the recited limitation of claim 1 of "controlling the polarization states of two pulses during the course from the splitting to the recombining to make said polarization states same after recombining before output," the polarization states of two pulses respectively passing through the light paths 42 and 43 would have to be controlled to make the polarization states the same in the light path after the coupler 44 but before the optical fiber 3. Gisin simply does not disclose or suggest such polarization control, nor does Gisin disclose or suggest components to accomplish such polarization control. Therefore, Gisin fails to teach or suggest every limitation of claim 1.

Accordingly, Applicants respectfully contend that Gisin fails to disclose or suggest "controlling the polarization states of two pulses during the course from the splitting to the

recombining to make said polarization states same after recombining before output” as required by claim 1. Thus, Gisin fails to anticipate claim 1. For at least this reason, claim 1 and dependent claims 2-7, and 9 are allowable over Gisin.

Claim 10 recites a “transmitter side polarization-controlled encoder for splitting an optical pulse” and a “receiver side polarization-controlled encoder for receiving said optical pulses.” As with claim 1, Gisin fails to teach or suggest such polarization control. Therefore, for at least this reason, Gisin fails to anticipate claim 10.

III. Rejections based on 35 U.S.C. § 103

Claims 11 and 12:

The Examiner has rejected claims 11 and 12 under 35 U.S.C. § 103 (a) as being unpatentable over Gisin in view of Duraffourg. As previously discussed above, Gisin fails to teach or suggest “transmitter side polarization-controlled encoder for splitting an optical pulse” and a “receiver side polarization-controlled encoder for receiving said optical pulses.” Duraffourg does not supply this missing limitation of claim 10. Therefore, for at least this reason, claims 11 and 12 are patentable over Gisin in view of Duraffourg.

Claim 8:

The Examiner has rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Gisin in view of Nambu. As discussed above in connection with claim 1, Gisin does not teach or suggest “controlling the polarization states of two pulses during the course from the splitting to the recombining to make said polarization states same after recombining before output” as recited in claim 1. Nambu also fails to teach or suggest such a limitation. Therefore, Gisin in view of Nambu fails to establish a *prima facie* case of obviousness, and therefore claim 8 is allowable over Gisin in view of Nambu.

CONCLUSION

In light of the foregoing reasons, Applicants respectfully request reconsideration and allowance of the pending claims in this application. The Commissioner is authorized to charge any additional fees or credit any overpayments associated with this Response to Deposit Account 13-0206. Applicants further invite the Examiner to contact the undersigned representative at the telephone number below to discuss any matters pertaining to the present Application.

Respectfully submitted,


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I hereby certify that this correspondence is, on the date shown below, being deposited with the United States Postal Service, with first class postage prepaid, in an envelope addressed to: Mail Stop AMENDMENT, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 18, 2010.



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